

CLAIMS

1. A composition which, after administration to a subject, is able to induce an antibody response in that subject, wherein the antibody response is bactericidal against two or more of hypervirulent lineages A4, ET-5 and lineage 3 of *N.meningitidis* serogroup B.
- 5 2. The composition of claim 1, comprising from 2 to 10 polypeptides, each having a different amino acid sequence.
3. The composition of claim 1 or claim 2, wherein the components which give rise to the bactericidal antibody response are obtained by recombinant expression.
4. A composition comprising five meningococcal antigens: (1) a 'NadA' protein; (2) a '741' protein; (3) a '936' protein; (4) a '953' protein; and (5) a '287' protein.
- 10 5. The composition of claim 4, wherein the NadA protein has 85% or more identity to SEQ ID 2.
6. The composition of claim 5, wherein the NadA protein comprises SEQ ID 2.
7. The composition of any one of claims 4 to 6, wherein the 741 protein has 85% or more identity to SEQ ID 3.
- 15 8. The composition of claim 7, wherein the 741 protein comprises SEQ ID 3.
9. The composition of any one of claims 4 to 8, wherein the 936 protein has 85% or more identity to SEQ ID 4.
10. The composition of claim 9, wherein the 936 protein comprises SEQ ID 4.
11. The composition of any one of claims 4 to 10, wherein the 953 protein has 85% or more identity to SEQ ID 5.
- 20 12. The composition of claim 11, wherein the 953 protein comprises SEQ ID 5.
13. The composition of any one of claims 4 to 12, wherein the 287 protein has 85% or more identity to SEQ ID 6.
14. The composition of claim 13, wherein the 287 protein comprises SEQ ID 6.
- 25 15. The composition of any one of claims 4 to 14, wherein at least two of the antigens (1) to (5) are expressed as a single polypeptide chain.
16. The composition of any preceding claim, wherein the composition comprises a polypeptide which comprises a pair of antigens within a single polypeptide chain selected from the group consisting of: NadA & 741; NadA & 936; NadA & 953; NadA & 287; 741 & 936; 741 & 953; 741 & 287; 936 & 953; 936 & 287; 953 & 287.
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17. The composition of any preceding claim, wherein the composition comprises a polypeptide of formula $\text{NH}_2\text{-A-}[\text{-X-L-}]_n\text{-B-COOH}$, wherein: X is an amino acid sequence of one of the five antigens (1) to (5); L is an optional linker amino acid sequence; A is an optional N-terminal amino acid sequence; B is an optional C-terminal amino acid sequence; and n is 2, 3, 4 or 5.
- 5 18. The composition of claim 17, wherein n is 2, X₁ is a 936 protein and X₂ is a 741 protein.
19. The composition of claim 17, wherein n is 2, X₁ is a 287 protein and X₂ is a 953 protein.
20. The composition of any preceding claim, comprising a protein comprising SEQ ID 7.
21. The composition of any preceding claim, comprising a protein comprising SEQ ID 8.
22. The composition of any preceding claim, further comprising saccharide antigens from
10 meningococcus serogroups Y, W135, C and (optionally) A.
23. The composition of any preceding claim, further comprising a saccharide antigen from *Haemophilus influenzae* type B.
24. The composition of claim 22 or claim 23, wherein the saccharide antigen is conjugated to a carrier selected from: diphtheria toxoid, tetanus toxoid, CRM₁₉₇ or *H.influenzae* protein D.
- 15 25. The composition of any preceding claim, further comprising an antigen from *Streptococcus pneumoniae*.
26. The composition of any preceding claim, for use as a medicament.
27. The use of a composition of any preceding claim in the manufacture of a medicament for the prevention and/or treatment of a disease caused by a *Neisseria*.
- 20 28. A method for raising an antibody response in a mammal, comprising the step of administering an effective amount of a composition according to any one of claims 1 to 26.
29. A polypeptide having an amino acid sequence selected from the group consisting of SEQ IDs 1 to 8.
- 25 30. A process for purifying soluble NadA from a culture medium, comprising the steps of: concentration and diafiltration against a buffer by ultrafiltration; anionic column chromatography; hydrophobic column chromatography; hydroxylapatite ceramic column chromatography; diafiltration against a buffer; and filter sterilisation.
- 30 31. A process for purifying a 936-ΔG741 hybrid protein from a bacterium, comprising the steps of: homogenisation; centrifugation; cationic column chromatography; anionic column chromatography; hydrophobic column chromatography; diafiltration against a buffer; and filter sterilisation.